

Notice of Allowability	Application No.	Applicant(s)	
	09/614,489	SWALES, ANDREW G.	
	Examiner	Art Unit	
	Khanh Dinh	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/27/2005.
2. ☒ The allowed claim(s) is/are 29-35, 37-46, 48-50 and 52-55.
3. ☒ The drawings filed on 27 July 2005 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Khanh Dinh
A.U. 2151

[Signature]

EXAMINER'S AMENDMENT

1. This is in response to the Response after Final filed on 7/27/2005.
2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Vernon C. Asmus (the Undersigned Attorney, Reg. No.42,269) on 8/4/2005.

The application has been amended as follows:

IN THE CLAIMS:

Please **cancel** claims 36, 47 and 51.

Please **amend** claims as follows:

29. (Currently Amended) A method for determining ~~[[the]]~~ a correct Internet Protocol (IP) address for network-connected devices, comprising:
receiving from a target device on the network a request to be
assigned an IP address, the request including a Media Access
Control (MAC) address associated with the target device;
issuing a query to one or more managed Ethernet switches on the
network, each switch having a number of ports, where each
query specifies the MAC address and requests that the
queried managed Ethernet switch report the number of any
port on which was received data sent by a device having the
specified MAC address;
receiving replies to one or more of the queries; ~~and~~

in response to determining that one of the queried managed Ethernet switches and a port number reported by that switch corresponds to ~~a single known IP address, assigning that known IP address to the target device~~
at least one known IP address, sending messages to each said target device indicated by said known IP address, so as to elicit a response for those devices currently in service;
if identifying a single known IP address not in service by lack of response, assigning that single known IP address to the target device; and
if identifying that there is more than a single known IP address not in service, not assigning any IP address to the target device.

30. (Previously presented) The method of claim 29 further comprising:
maintaining a database listing one or more devices connected to a network, wherein each listed device has an entry that includes an IP address associated with the listed device, an identity of a managed Ethernet switch to which the listed device is associated, and a port number of the managed Ethernet switch to which the listed device is associated.

31. (Previously presented) The method of claim 30 wherein determining that one of the queried managed Ethernet switches and a port number reported by that queried managed Ethernet switch corresponds to a known IP address includes matching the one of the queried managed Ethernet switches and the port number reported by that queried managed Ethernet switch to an entry in the database, thereby identifying the IP address in that entry to be the known IP address.

32. (Previously presented) The method of claim 29 wherein the one or more managed Ethernet switches each support find port queries as defined in Internet standard document RFC 1493.

33. (Previously presented) The method of claim 29 wherein the target device's request to be assigned an IP address complies with the Bootstrap Protocol as defined in Internet standard document RFC 951.

34. (Previously presented) The method of claim 29 wherein the target device's request to be assigned an IP address complies with the Dynamic Host Configuration Protocol (DHCP) as defined in Internet standard document RFC 1531.

35. (Previously presented) The method of claim 29 wherein the queries to the one or more managed Ethernet switches complies with management protocol as defined in Internet standard document RFC 1493.

36. Canceled

37. (Currently Amended) The method of claim ~~36~~ 29 wherein each message sent is an ICMP ECHO or PING request.

38. (Currently Amended) The method of claim ~~36~~ 29 wherein each message sent is a broadcast Address Resolution Protocol (ARP) request.

39. (Currently Amended) The method of claim ~~36~~ 29 wherein each message sent is a unicast Address Resolution Protocol (ARP) request.

40. (Previously presented) The method of claim 29 further comprising:

periodically polling devices connected to the network to determine whether the current status of each device is in service or not in service; and
updating a database with the current status based on the polling.

41. (Previously presented) The method of claim 40 wherein in response to determining that one of the queried managed Ethernet switches and a port number reported by that switch corresponds to more than one known IP address, the method further comprises: consulting the database to identify known IP addresses not in service; and in response to determining that there is only a single known IP address not in service, assigning that known IP address to the target device.

42. (Previously presented) The method of claim 40 wherein the polling includes:
sending messages to each device, so as to elicit a response from each of those devices currently in service, thereby identifying known IP addresses not in service by lack of response.

43. (Previously presented) The method of claim 29 wherein assigning the known IP address to the target device includes sending a response to the target device, thereby indicating to the target device that an IP address has been allocated.

44. (Previously presented) The method of claim 43 wherein both the target device's request to be assigned an IP address and the response to the target device complies with the Bootstrap Protocol as defined in Internet standard document RFC 951.

45. (Previously presented) The method of claim 43 wherein both the target device's request to be assigned an IP address and the

response to the target device complies with the Dynamic Host Configuration Protocol (DHCP) as defined in Internet standard document RFC 1531.

46. (Currently Amended) A method for determining ~~[[the]]~~ a correct Internet Protocol (IP) address for network-connected devices, comprising:

- maintaining a database listing one or more devices connected to a network, wherein each listed device has an entry that includes an IP address associated with the listed device, an identity of a managed Ethernet switch to which the listed device is associated, and a port number of the managed Ethernet switch to which the listed device is associated;
- receiving from a target device on the network a request to be assigned an IP address, the request including a Media Access Control (MAC) address associated with the target device;
- identifying the MAC address included in the request;
- identifying managed Ethernet switches associated with devices connected to the network whose IP addresses are listed in the database, thereby identifying target managed Ethernet switches, each managed Ethernet switch having a number of ports and capable of reporting the port to which a device is attached in response to a find port query specifying that device's MAC address;
- issuing a query to each of the target managed Ethernet switches, where each query specifies the identified MAC address and requests that the queried managed Ethernet switch report the number of any port on which was received a message sent by a device having the identified MAC address;

analyzing replies to each of the queries to determine if an entry in the database matches one of the queried managed Ethernet switches and the port number reported by that switch; and in response to at least only one entry matching, assigning the IP address of that entry to the target device
sending messages to each said target device indicated by said entry matching, so as to elicit a response for those devices currently in service;
if identifying a single known IP address not in service by lack of response, assigning that single known IP address to the target device; and
if identifying that there is more than a single known IP address not in service, not assigning any IP address to the target device.

47. Canceled

48. (Currently Amended) A method for determining ~~[[the]]~~ a correct Internet Protocol (IP) address for network-connected devices, comprising:
receiving from a target device on the network a request to be assigned an IP address, the request including a physical address associated with the target device, wherein the target device is a network computing device;
issuing a query to one or more managed Ethernet switches on the network, each switch having a number of ports, where each query specifies the physical address and requests that the queried managed Ethernet switch report the number of any port on which was received data sent by a device having the specified physical address;
receiving replies to one or more of the queries;

in response to determining that one of the queried managed Ethernet switches and a port number reported by that switch corresponds to a single known IP address, assigning that known IP address to the target device; and
in response to determining that one of the queried managed Ethernet switches and a port number reported by that switch corresponds to more than one known IP address, ~~determining that only one of the known IP addresses is not in service, and assigning that one known IP address to the target device~~
not assigning any IP address to the target device.

49. (Previously presented) The method of claim 48 further comprising:
periodically polling devices connected to the network to determine whether the current status of each device is in service or not in service; and updating a database with the current status based on the polling.

50. (Previously presented) The method of claim 49 wherein in response to determining that one of the queried managed Ethernet switches and a port number reported by that switch corresponds to more than one known IP address, the method further comprises:
consulting the database to identify known IP addresses not in service.

51. Canceled.

52. (Currently Amended) A method for determining ~~[[the]]~~ a correct Internet Protocol (IP) address for network-connected devices, comprising:
receiving from a target device on the network a request to be assigned an IP address, the request including a physical

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address associated with the target device, wherein the request complies with at least one of the Internet standard RFC 951 Bootstrap Protocol and the Internet standard RFC 1531 Dynamic Host Configuration Protocol (DHCP);

issuing a query to one or more managed network switches on the network, such switches being distinct from hubs and routers, with each switch having a number of ports, where each query specifies the physical address and requests that the queried managed network switch report the number of any port on which was received data sent by a device having the specified physical address, wherein each query complies with management protocol as defined in Internet standard document RFC 1493;

in response to determining that one of the queried managed network switches and a port number reported by that switch corresponds to a single known IP address, assigning that known IP address to the target device;

in response to determining that one of the queried managed Ethernet switches and a port number reported by that switch corresponds to ~~a single known IP address, assigning that known IP address to the target device~~

at least one known IP address, sending messages to each said target device indicated by said known IP address, so as to elicit a response for those devices currently in service; and

if identifying a single known IP address not in service by lack of response, assigning that single known IP address to the target device; and

if identifying that there is more than a single known IP address not in service, not assigning any IP address to the target device.

53. (Currently Amended) A method for determining ~~[[the]]~~ a correct Internet Protocol (IP) address for network-connected devices, comprising:

- receiving from a target device on the network a request to be assigned an IP address, the request including a physical address associated with the target device;
- issuing a query to one or more managed network switches on the network, such switches being distinct from hubs and routers, with each switch having a number of ports, where each query specifies the physical address and requests the queried managed network switch to report the number of any port on which was received data sent by a device having the specified physical address;
- receiving replies to one or more of the queries; ~~and~~
- in response to determining that one of the queried managed Ethernet switches and a port number reported by that switch corresponds to ~~a single known IP address, assigning that known IP address to the target device~~
at least one known IP address, sending messages to each said target device indicated by said known IP address, so as to elicit a response for those devices currently in service;
- if identifying a single known IP address not in service by lack of response, assigning that single known IP address to the target device; and
- if identifying that there is more than a single known IP address not in service, not assigning any IP address to the target device.

54. (Previously presented) The method of claim 53 wherein at least one of the managed network switches is connected to a hub having a number of hub ports.

55. (Previously presented) The method of claim 54 wherein a plurality of devices are coupled to the hub ports, and the at least one managed network switch reports all MAC addresses and port assignments associated with the hubs and devices.

Allowable Subject Matter

3. Claims 29-35, 37-46, 48-50 and 52-55 are allowed.

Reason for allowance

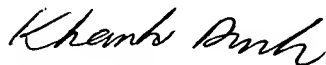
4. The above mention claims are allowable over the prior art of record does not appear to each or render obvious the claimed limitations in combination with the specific added limitations as recited in independent claims and subsequent dependent claims. None of the cited prior art discloses or teaches a method for determining a correct Internet Protocol address for network-connected devices comprising a combination of: issuing a query specifying a MAC address to one of the managed switches on a network and receiving replies from a Ethernet switch report. In response to determining that one of the queried managed Ethernet switches and a port number reported by that switch corresponds to at least one known IP address, sending messages to each said target device indicated by said known IP address, so as to elicit a response for those devices currently in service; if identifying a single known IP address not in service by lack of response, assigning that single known IP address to the target device; and if identifying that there is more than a single known IP address not in service, not assigning any IP address to the target device.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Dinh whose telephone number is (571) 272-3936. The examiner can normally be reached on Monday through Friday from 8:00 A.m. to 5:00 P.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung, can be reached on (571) 272-3939. The fax phone number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Khanh Dinh
Patent Examiner
Art Unit 2151
8/5/2005